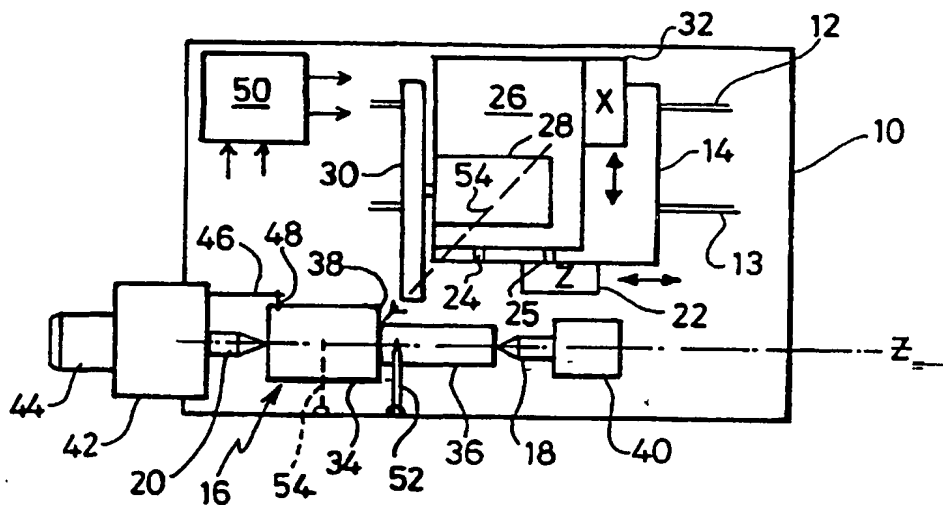




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(54) Title: ANGLE HEAD GRINDING METHOD AND APPARATUS



(57) Abstract

In a computer controlled grinding machine for grinding a cylindrical region (36) and an annular shoulder (38) of a rotatable workpiece (16), relative movement is effected between the workpiece and a grinding wheel (30) mounted on a wheelhead (26) along a line of action (54) which subtends an angle of approach of less than 90° to the Z-axis of rotation of the workpiece. Such an angle of approach enables the wheel to grind the annular shoulder of the workpiece simultaneously with grinding the cylindrical portion. In a modified arrangement, the wheel may be rotatable about an axis which is perpendicular to the line of action, in which case it is formed with first and second frusto-conical surfaces (72, 74) which are perpendicular to each other, the first surface (72) serving to grind the cylindrical surface (36) while the second surface (74) grinds the shoulder (38) of the workpiece.